the name of the class which has been generally adopted in England, and which commemorates the remarkable researches of an unobtrusive but most able and original worker in the province of invertebrate zoology. We have no intention of reviving the controversy on this subject, in which indeed Miss Jelly takes no part, as she does not state the grounds on which she bases her decision. The *consensus* of Continental naturalists in favour of Ehrenberg's name has no doubt had much weight with her, but the appeal to numbers is hardly likely to satisfy those who have tried the case on its merits, and arrived at a different conclusion. Of course it would be satisfactory to secure uniformity of nomenclature, if it were possible; but those who have a strong conviction that J. V. Thompson was the earliest to appreciate and define the distinctive peculiarities of Polyzoan structure, and that his name was intended to apply not merely to the zooids of a colony, but to the type of organization which they represent, can hardly consent to be parties to an absolute rejection of his claim.

The value of such works as the present depends entirely on the care and minute accuracy with which they are compiled. Miss Jelly's "Catalogue" affords abundant proof that these qualities have not been wanting in her case. That she possesses a thorough command of the literature of her subject is shown by the fulness of the synonymy, and (very strikingly) by the explanatory notes appended to many of the species. The book supplies ample evidence of intelligent and enthusiastic interest in the subject, and patient industry in dealing with it.

As to the synonymy itself, many difficult questions arise in connection with it, which clearly cannot be discussed in a work which aims at being a guide to the recorded species, and not a critical treatise. In not a few cases of supposed synonymy we should feel compelled to dissent from the conclusions arrived at, or adopted from others. But on such points the student must satisfy himself.

We may add that the book is handsomely got up, and printed in a type which, so far as clearness is concerned, leaves nothing to be desired.

Miss Jelly is to be congratulated on the completion of a very onerous task, and on the valuable contribution which she has made to the working apparatus of the student.

## OUR BOOK SHELF.

*Zoologische Ergebnisse einer Reise in Niederlandsch Ost-Indien.* Von Dr. Max Weber. Erstes Heft. (Leiden: Brill, 1890.)

The numerous books, memoirs, and pamphlets that have been published during the century dealing with the natural history of the Malay Archipelago have revealed to the world of science a fauna which is perhaps unrivalled for richness, variety, and general interest. But even now we are scarcely beyond the threshold of the investigation. The travels of von Rosenberg, Wallace, van Martens, Forbes, and others, and the painstaking observations and collections of many of the Dutch residents and *controleurs*, have given us a knowledge of the principal features of the ornithology and entomology of some of the more important islands, but there are still many regions of undoubted interest that have scarcely been explored at all, even by their nominal masters the Dutch. During the journey undertaken by Prof. Weber and his wife in 1888 and 1889 some of these little-known regions and islands were visited, and the results are now appearing in a series of memoirs prepared by eminent Dutch naturalists, under the editorship of the distinguished Professor of Zoology at Amsterdam.

Several interesting new forms are described in the first part; and no doubt many others will follow in the memoirs that are now in course of preparation, from Central Celebes, Flores, and the Saleyer Islands—regions that have hitherto scarcely been visited by naturalists. But the interest in Prof. Weber's results does not by any means lie exclusively in the fauna of the remote corners of the archipelago. By investigating the fresh-water fauna and the inconspicuous forms of terrestrial invertebrates of all the districts visited, he has opened to us a new chapter in the natural history of the archipelago. The memoirs on Spongillidæ by the editor, on Apterygota by Oudemans, and on the land Planaria by Loman, are most valuable and interesting contributions to our knowledge of the tropical species of these groups. Of more than special importance is the paper by the Professor and Madame Weber, "On some New Cases of Symbiosis." One of the most remarkable of those described is that of an alga belonging to the family Trentepohliaceæ symbiotic with a fresh-water sponge. This paper is in French, and contains an interesting discussion of the problems presented and the literature of the subject.

Two memoirs, in English, by Prof. Weber and by Dr. Jentinck, deal with the mammalia collected during the journey. It appears from these pages that the curious animal the sapiutan, *Anoa depressicornis*, is not confined to the northern peninsula of Celebes, as is usually stated to be the case, but may be found in favourable localities all over the island. In a long discussion on the habitat of the rare monkey *Macacus maurus*, we are told that it occurs on the Maros River and elsewhere in South Celebes, and that it should be considered to be "one more of the remarkable animals peculiar only to that island, with a continental character."

Every naturalist who reads this first part of Prof. Weber's results will look forward with interest to the publication of the memoirs that are still in course of preparation. SYDNEY J. HICKSON.

*Inorganic Chemistry, Theoretical and Practical.* By William Jago, F.C.S., F.I.C. (London: Longmans, Green, and Co., 1890.)

The number of classes established according to the regulations of the Science and Art Department is now so considerable that publishers and authors alike are ready to specially cater for their needs. Messrs. Longmans, Green, and Co. have already an extensive series of "science manuals" written to meet the requirements of students taking the elementary stage of subjects as given in the Directory of the Department; and Mr. Jago's volume is one of a similar series that is in preparation to include the matter prescribed in the advanced syllabus of each subject. After the preface we are nowhere reminded of the particular aim of the book, or of the limitations under which the author has done his work; and it is worthy of note that the papers set by the Department examiners are not reprinted at the end. Leaving the particular meaning attached to the words elementary and advanced by the Science and Art Department, we may describe the volume before us as an elementary treatise on inorganic chemistry, of about 460 pages. It includes a consideration of the more common metals and their compounds, three pages concerning the periodic law, and six pages on the "causes which modify chemical action." Fluorine takes its natural place among the halogens as an isolated element, and other of the recent advances are duly noticed. Some parts are very meagre, as, for example, the paragraphs

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on acetylene, in which, by the way, there occurs the very objectionable expression "two volumes of carbon" in reference to the composition of the gas. The statement that "nitric acid is largely used in the manufacture of sulphuric acid" needs qualification, especially as we are told that "sulphuric acid is largely employed in the preparation of . . . nitric acid." But, on the whole, the manual is one that deserves recommendation, and will be valued by those for whose use it has been written.

We would suggest that, in the future editions that will doubtless be called for, "choke" or "after-damp" be not described as carbon dioxide, because the amount of carbon dioxide in it is very small compared with the nitrogen present; and we do not think that the examiners at South Kensington would harshly judge any student who corrected the current notion. And if the engraver of the illustrations had photographs of the apparatus supplied him, or, better still, if the blocks could be prepared mechanically from such photographs, the figures would have an appearance of genuineness which at present many of them lack. It is better to represent the apparatus used than the operation in progress, and then one avoids such unnecessary and unwise conventionalities as appear in the attempt to illustrate a brilliant combustion in a glass jar.

*Arithmetical Chemistry.* Part I. By C. J. Woodward, B Sc. New Edition. (London: Simpkin, Marshall, and Co., 1890.)

In the study of chemistry there is a certain amount of arithmetical work which the elementary student must master as he progresses, and this used to be generally considered as the part in which the young pupil was most likely to fail. But now it is different, and we fear that there is rather a danger of too much stress being laid upon arithmetical exercises. In the volume before us the author proceeds by easy stages, explaining the various subjects dealt with in a sound and simple manner. We hope for the student's sake that it is intended for the teacher to select from the numerous exercises set. At the end of the volume there are "the whole of the questions in arithmetical chemistry and chemical philosophy," selected from the examination papers of five different examining bodies, for the years 1886 to 1889 inclusive. These will doubtless be useful to the teacher if used with discretion enough to prevent his students from imagining that chemistry is a branch of arithmetic.

*Air-Analysis: with an Appendix on Illuminating Gas.* By J. Alfred Wanklyn and W. J. Cooper. (London: Kegan Paul, Trench, Trübner, and Co., Ltd., 1890.)

This small volume of ninety pages is a practical guide to air-analysis, especially for sanitary purposes. The directions are plain, and multiplication of methods is avoided. Hempel's apparatus is employed. For the estimation of oxygen, nitric oxide is advised, and it is pointed out that as an excess of the gas is used it need not be pure. The authors state that, in their hands, this method has proved very accurate, and they give experimental results showing that it is to be preferred to alkaline pyrogallol or explosion with hydrogen. Directions for these latter methods are, however, included. The estimation of small quantities of carbonic oxide is performed by absorption in a cuprous chloride solution, with subsequent elimination and measurement of the gas. The analysis of coal-gas is dealt with in the appendix, and the volume concludes with some useful tables. As an addition to the treatises on special branches of analysis written by Mr. Wanklyn, either solely or jointly, this volume will be welcomed by analysts and students.

*Fresh-water Aquaria: their Construction, Arrangement, and Management.* By Rev. Gregory C. Bateman. (London: L. Upcott Gill, 1890.)

Mr. Bateman says that he has always been fond of natural history, and that when he was a boy he looked forward with pleasure to the prospect of having an aquarium of his own. When this delight was experienced, he found that it had many drawbacks. These were due to the fact that he did not know how to manage his treasure. He bought or borrowed books on the subject, but was not able to obtain all the information he required. Then he tried to find out by experiment what he could not learn by reading; and as most of his attempts were in the end successful, he resolved that he would write such a book as he himself had wished for when he was making his "first blunders in aquarium matters." The present volume is the result of this decision, and there can be no doubt that it will be very cordially welcomed by many students who want just such information as the author has brought together. He writes simply, clearly, and practically, and no one who reads with moderate care what he has to say will find much difficulty in complying with the rules he lays down. He gives, also, interesting details as to the best water-plants and live stock to be kept, how and where they are to be obtained, and how they are to be maintained in health. The volume includes many illustrations.

*Scenes and Stories of the North of Scotland.* By John Sinclair. (Edinburgh: James Thin. London: Simpkin, Marshall, and Co. 1890.)

Mr. Sinclair is an intelligent and lively writer, and has produced a book which may be read with pleasure by persons who have visited, or think of visiting, the scenes he describes. The work is not, in the strict sense, scientific; but it includes many passages which are, to a certain extent, of scientific interest. The subjects are: Loch Duich, Ross-shire; the Black Rock, Ross-shire; the Island of Lewis; Assynt, in Sutherland; the Caithness coast; the town of Thurso; and the Shetland Islands. Here is ample scope for fresh observation and bright description; and the author has generally made good use of his opportunities. It is to be regretted, however, that he did not, before writing of the Island of Lewis, make himself acquainted with what trustworthy archæologists have said about the great prehistoric monument at Callernish. "There is little doubt," he asserts, "that these standing stones are a monument of the ancient Druids." There is not a shred of evidence that the Druids had anything whatever to do either with these or with any other "standing stones."

## LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* Nature. *No notice is taken of anonymous communications.*]

### The Discharge of Electricity through Gases.

On returning from abroad I find that Prof. J. J. Thomson has written to you to complain about a passage in my Bakerian Lecture, and I should like to say a few words in explanation. I am sorry if I have said anything that would seem unfair to Prof. Thomson, but I have re-read his paper, and confess that my difficulties have not been cleared away.

I shall be glad to be allowed to enter somewhat fully into the objection raised by Prof. Thomson to my remarks, as, independently of any personal question, this may help to clear up some disputed matters. The point at issue between Prof. Thomson and myself is, whether the Clausius-Williamson dissociation hypothesis forms an essential portion of the views on

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